porvair filtration group

GasPro™ IFR

Ultra High-Purity Sintered Porous Media In-line Flow Restrictors

When a set flow rate is required, Porvair's GasPro™ In-line Porous Metal Flow Restrictors are the low-cost alternative that can replace your flow controllers, needle valves, and calibrated orifices.

Flow limiting devices are often installed in compressed gas supply lines and gas distribution manifolds to prevent unintentional high gas flow caused by ruptured gas lines, or malfunctioning valve or pressure regulators.

Features and Benefits

- **Improved gas safety management**
  Porous metal flow restrictors are in-line devices that precisely limit the gas flow in case of catastrophic failure of a valve, pressure regulator, distribution manifold or gas supply line. They can be used in a wide range of inert, highly toxic and pyrophoric gases to reduce the handling risk.
- **Semiconductor industry, building & fire code compliance**
  Porous metal flow restrictors can assist in complying with SEMI S5-0310 Safety Guidelines for sizing and identifying flow limiting devices for gas cylinder valves, NFPA 318 Standard for Protection of Semiconductor Fabrication Facilities, CGA G-13 Storage and Handling of Silane and other gas safety standards.
- **Cost reduction of exhaust venting systems**
  With the option of installing porous metal flow restrictors, gas delivery systems can be designed with smaller, lower flow exhaust for significant capital investment savings.
- **Reliable, tamper proof flow control**
  Porous metal flow restrictors have no moving parts and do not require any power. They will continue to provide accurate, fixed flow without adjustment over the product's lifespan.
- **Sintered porous media provides laminar flow**
  Engineered to have enormous numbers of micro-scale, interconnected passageways that restrict and limit flow in a gas line. Unlike single bore orifice flow restrictors, porous metal flow restrictors have greater resistance to plugging, decrease flow turbulence, and reduce flow burden for a longer lasting product.
- **Pressure stabilization**
  Prevention of pressure surges and pressure shock protects and improves dynamic flow control performance downstream.

Design flexibility

Porvair's porous metal flow restrictors accommodate a wide range of flow requirements. For technical data on a specific flow restrictor, or help on selecting the best flow restrictor for your application, contact the Porvair sales team with the following information, to discuss product availability:

1. Gas type and operating temperature
2. Inlet pressure
4. Desired downstream flow rate
3. Downstream pressure
5. Fitting size, type, and material.

Specifications

All metal construction

A stainless steel porous element is fitted into a standard stainless steel face seal fitting. Other materials and fitting configurations are available.

Calibrated using N2, He, H2, Air, O2 or Ar. Other density gases will be calibrated using N2 as a correlation.

Wide range of operating conditions

Standard flow tolerance of +7.5% of the rated flow at the rated pressure and gas type.

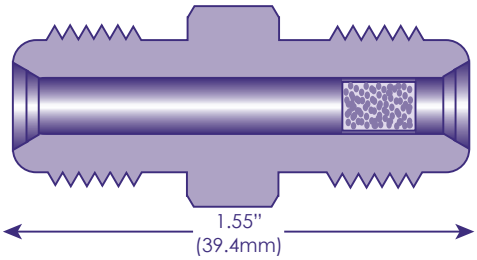
Down stream flow rates from 60 SLPM down to 1 SCCM.

Operating pressures up to 110psig (standardising to atmosphere).

Sustained operating conditions in temperatures up to 450°C in inert gas applications.

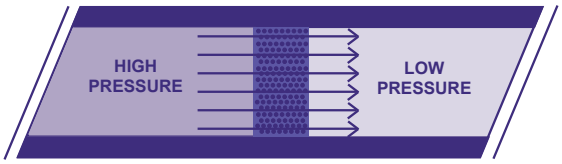
Cross Section Example

Example Hardware B: 1/4" x 1/4" VCR



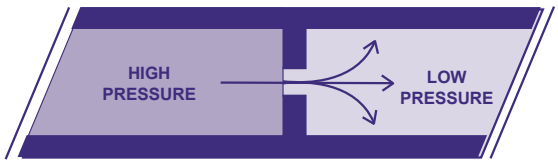
Porvair Sinterflo® AP IFR Flow Restrictors

- Low gas approach velocity, virtually no effect on performance.
- Sinterflo® AP media with multiple pathway resists particulate fouling.
- Low velocity gas flow creates laminar downstream flow.



Traditional Single Orifice Device

- High gas velocity, pressure, heat causing erosion.
- Particulate fowling changes gas flow volume.
- Downstream turbulent gas flow.



Ordering Guide

Product Code: 1 2 3 4 5 6 7 **Eg: IFR4SS20N-250**

1. Part Number	2. Face Seal Size		3. Porous Material		4. Inlet Pressure (psig)	5. Calibration Gas Type		Flow Rate	Outlet Pressure (psig)	
IFR	4	¼"	SS	Stainless Steel 316L	Up to 110psig	N2	Nitrogen	1- 60,000 SCCM	None	Atmospherre
						He	Helium		- 15	Vacuum
						H2	Hydrogen			
						O2	Oxygen			
						Ar	Argon			
						CDA	Air			

Note: The following table does not represent all avalible flow restrictor options. Contact a Porvair sales representative for requests.

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